

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL
FORM

(to be used for all correspondence after initial filing)

Application Number	10/578,033
Filing Date	with an effective filing date of November 2, 2004
First Named Inventor	Tadayoshi KAMIYA et al.
Group Art Unit	
Examiner Name	
Attorney Docket Number	ADACHI P275US
Total No. of Pages in this Submission: 10	Fax: (571) 273-8300

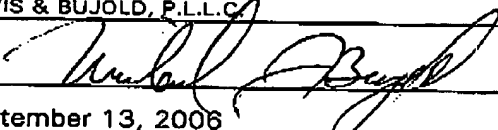
ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee attached <input type="checkbox"/> Amendment/Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request (in Duplicate) <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Part/s Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition Routing Slip (PTO/SB/69) and Accompanying Petition (DELETED - no longer useful) <input type="checkbox"/> To Convert a Provisional Petition <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Small Entity Statement <input type="checkbox"/> Request for Refund	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Additional Enclosure(s) (please identify below): Submission of Int'l Prelim.Exam.Rpt Int'l Prelim. Exam.Rpt
--	---	---

RECEIVED
CENTRAL FAX CENTER
SEP 13 2006


REMARKS

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name	Michael J. BUJOLD DAVIS & BUJOLD, P.L.L.C.	Reg. No. 32,018 CUSTOMER NO. 020210
Signature		
Date	September 13, 2006	

CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the USPTO on September 13, 2006

Type or printed name	Michael J. BUJOLD
Signature	
Date: September 13, 2006	(lfb)

RECEIVED
CENTRAL FAX CENTER

SEP 13 2006

9/13/06

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Tadayoshi KAMIYA, Soichi SHIRAI, Mikio ASAI,
Nobuyuki SHIRAI, Yoshiyuki TAKEUCHI,
Serial no. : Toshihiko SHIMA and Hiroaki SUZUKI
Filed : 10/578,033
For : with an effective filing date of November 2, 2004
SOLENOID VALVE DEVICE INSTALLED IN GAS
TANK
Group Art Unit :
Examiner :
Docket : ADACHI P275US

The Commissioner for Patents
U.S. Patent & Trademark Office
P. O. Box 1450
Alexandria, VA 22313-1450

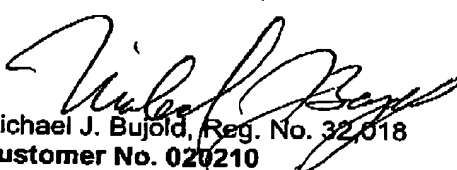
SUBMISSION OF ENGLISH TRANSLATION OF
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Dear Sir:

Enclosed please find an English translation of the International Preliminary Examination Report concerning the above-identified application. Please enter the same into the record of this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



Michael J. Bujold, Reg. No. 32,018
Customer No. 020210
Davis & Bujold, P.L.L.C.
112 Pleasant Street
Concord, NH 03301-2931
Telephone 603-226-7490
Facsimile 603-226-7499
E-mail: patent@davisandbujold.com

PATENT COOPERATION TREATY

PCT/JP2004/016273

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

From the INTERNATIONAL BUREAU

RECEIVED

CENTRAL FAX CENTER

SEP 13 2006

To:

ADACHI, Tsutomu
Nagoyaseni Bldg. 7F
9-27, Nishiki 2-chome
Naka-ku, Nagoya-shi
Aichi 460-0003
JAPON



Date of mailing (day/month/year) 03 August 2006 (03.08.2006)	
Applicant's or agent's file reference TOY-1-PCT	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/016273	International filing date (day/month/year) 02 November 2004 (02.11.2004)
Applicant TOYOOKI KOGYO CO., LTD. et al	

1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes in the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

Facsimile No. +41 22 338 82 70

Facsimile No. +41 22 338 82 70

Form PCT/IB/338 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference TOY-1-PCT	FOR FURTHER ACTION See item 4 below	
International application No. PCT/JP2004/016273	International filing date (day/month/year) 02 November 2004 (02.11.2004)	Priority date (day/month/year) 05 November 2003 (05.11.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant TOYOOKI KOGYO CO., LTD.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).	
2. This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.	
3. This report contains indications relating to the following items:	
<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).	

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70 Form PCT/IB/373 (January 2004)	Date of issuance of this report 24 July 2006 (24.07.2006)
	Authorized officer Masashi Honda e-mail: pt08@wipo.int

PATENT COOPERATION TREATY

TRANSLATION

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.11)

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

Date of mailing
(day/month/year)

Applicant's or agent's file reference

TOY-1-PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/016273

International filing date (day/month/year)

02.11.2004

Priority date (day/month/year)

05.11.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

TOYOOKI KOGYO CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
☐ Box No. II Priority
☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☒ Box No. IV Lack of unity of invention
☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐ Box No. VI Certain documents cited
☐ Box No. VII Certain defects in the international application
☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/237 (cover sheet) (January 2004)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCI/JP2004/016273

Box No. I	Basis of this opinion
1.	<p>With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language: _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).</p>
2.	<p>With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> in written format</p> <p><input type="checkbox"/> in computer readable form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed.</p> <p><input type="checkbox"/> filed together with the international application in computer readable form.</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.</p>
3.	<p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>
4.	<p>Additional comments:</p>

Form PCT/ISA/237 (Box No. I) (January 2004)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/016273

Box No. IV

Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
 - ☐ paid additional fees under protest
 - ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and charge not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:

A common technical feature of claims 1, 3, 4, and 5, which are independent claims of the present application is in an electromagnetic valve device "disposed in a gas tank filled with a high-pressure gas, having a movable magnetic core attracted to a fixed magnetic core and released therefrom by passing an electric current to a coil and terminating the passage of the current, wherein a valve body executes opening and closing action by coming into contact with a valve seat and being separated therefrom, wherein a valve main body having formed therein a fluid channel for communicating the inside of the gas tank with the outside is inserted from the outside into the inside of an orifice of the gas tank and installed in the orifice, a valve seat is provided in the fluid channel, a valve body that is free to move so as to come into contact with the valve seat and separate therefrom is provided in the valve main body, and an electromagnetic section comprising a movable magnetic core that is engaged with the valve body and can move and a fixed magnetic core that is provided opposite the movable magnetic core, attracts the movable magnetic core when an electric current is passed to the coils, and stops attracting the movable magnetic core when the supply of electric current to the coil is terminated is disposed inside an accommodation hole formed in the end section of the valve main body on the inner side of the gas tank." Because this structure is described in JP 2003-240148 A, no common special feature exists among the independent claims. Furthermore, claims 1 and 3, 4, or 5 do not have a common problem.

4. Consequently, this opinion has been established in respect of the following parts of the international applications:

- ☒ all parts
- ☐ the parts relating to claims Nos. _____

Form PCT/ISA/237 (Box No. IV) (January 2004)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY		International application No. PCT/JP2004/016273
Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
1. Statement		
Novelty (N)	Claims 1-7	YES
	Claims	NO
Inventive step (IS)	Claims 4-5	YES
	Claims 1-3, 6-7	NO
Industrial applicability (IA)	Claims 1-7	YES
	Claims	NO
2. Citations and explanations		
Claims 1-2		
Document 1: JP 2003-240148 A (Aisan Industries Co., Ltd.) Document 2: WP 96/35052 A1 (Robert Bosch GmbH)		
Document 1 describes an electromagnetic valve mounted inside a tank. Document 2 describes that an opening is formed in an end surface of a casing portion 4, which is equivalent to a cup member of the present application, in an electromagnetic valve, a filter member is disposed in the opening, and a fluid channel connecting an inflow pipe piece and an outflow pipe piece is provided along an outer side of the magnet casing. Employing a channel and valve casing structure described in document 2 as the fluid channel and valve casing structure of the electromagnetic valve described in document 1 would be easy for a person skilled in the art.		
Claim 3		
Document 1 and Document 3: JP 8-270820 A (CKD Kabushiki Kaisha)		
Document 3 describes forming an opening communicating with a fluid channel on the outer peripheral side of a valve main body and disposing a filter member in the form of a ring in the opening. Disposing a filter member in the form of a ring described in document 3 in the inlet port 19 of the electromagnetic valve described in document 1 would be easy for a person skilled in the art.		

Form PCT/ISA/237 (Box No. V) (January 2004)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/016273

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 2 describes "a fluid channel ... said valve main body on the outer side of said accommodation hole", but the "accommodation hole" has not been described heretofore and the configuration is, therefore, not clear.

Claim 5 describes that "a discharge channel capable of discharging said high-pressure gas to the outside is provided independently of said fluid channel in the valve main body, and a lead wire connected to said coil and outer power source is inserted through said discharge channel", but neither the specification nor the drawings describe a technology for closing the discharge channel having a lead wire inserted therethrough or a technology for removing the lead wire from the tube, and those features are not described to the degree sufficient for a person skilled in the art to implement the present invention.

RECEIVED
CENTRAL FAX CENTER

SEP 13 2006

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/016273

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

Claims 6-7

Documents 1-3

A technology of applying pressure to a member to be fixed with an elastic member inserted into a hole and locking the movement with a locking ring is a technology that has been widely employed for fixing an object inside a hole in the field of mechanics.

Furthermore, employing this technology for fixing a coil and/or a fixed magnetic core would be easy for a person skilled in the art.

Claim 4-5

Documents 1-3

The documents cited in the ISR neither describe nor suggest inserting a member for positioning in the rotation direction into a groove formed in a valve main body and a groove formed in a fixed magnetic core and forming a notch for passing through a lead wire connected to a coil and an outer power source in the member for positioning in the rotation direction. Furthermore, the documents neither describe nor suggest forming a discharge channel capable of discharging a high-pressure gas to the outside separately from a fluid channel in the valve main body and passing a lead wire connected to a coil and an outer power source into the discharge channel.

Form PCT/ISA/237 (Supplemental Box) (January 2004)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.